

Sustainable design in the credit crunch- A Swedish perspective

Anna Graaf
MSc, Director R&D Sustainability

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Presentation White
Sustainability
Development in Sweden
Possibilities/Benefits
What can be done?
Examples

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White



Sweden's largest architecture firm

No 5 in Scandinavia

8 offices in Sweden

2 in Denmark

1 in UK (Manchester)

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Figures

Founded in 1951

Turnover 45 M Euro/400 Mkr SEK

Owned by ourselves

99 partners

238 shareholders

520 employees

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Common values



Skills



Sustainability

Certified according to ISO 9001 and 14001
Environmental consultancy since 1991
Running a database for construction chemicals
Research and development in several areas of sustainability
Several projects executed

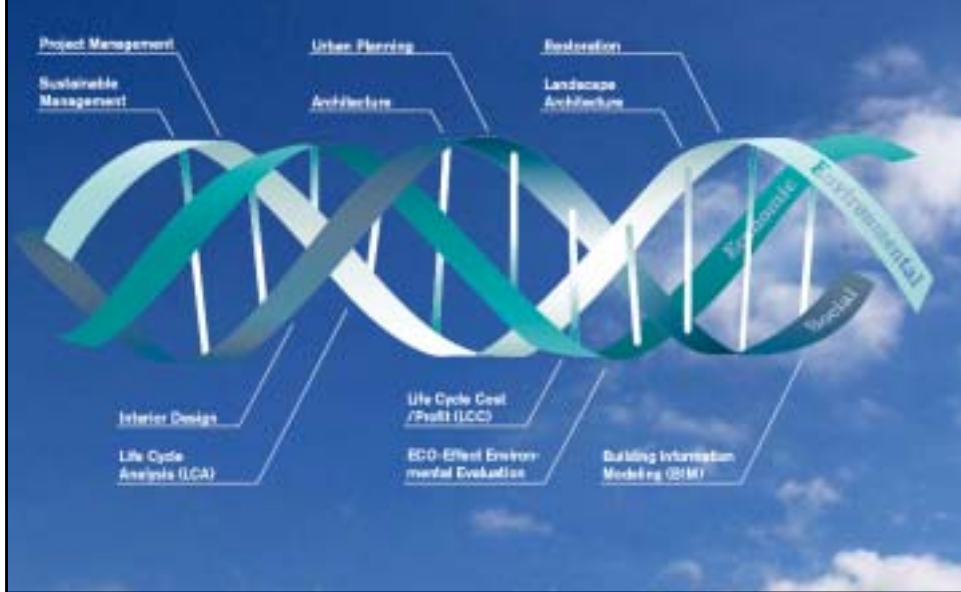
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Environmental consultancy

Specialists in environmental management, energy, sustainable design, building materials, indoor climate, environmental impact analysis

We have a holistic approach

Sustainable integrated design



White innovation process



Some projects....



Sustainability

Hammarby Sjöstad, Stockholm

Conservation of green spaces

Use of sustainable and renewable energy sources

Low energy district cooling/heating systems

Water collection and water saving devices

Automated waste disposal systems

Waste management

Bio-gas extraction

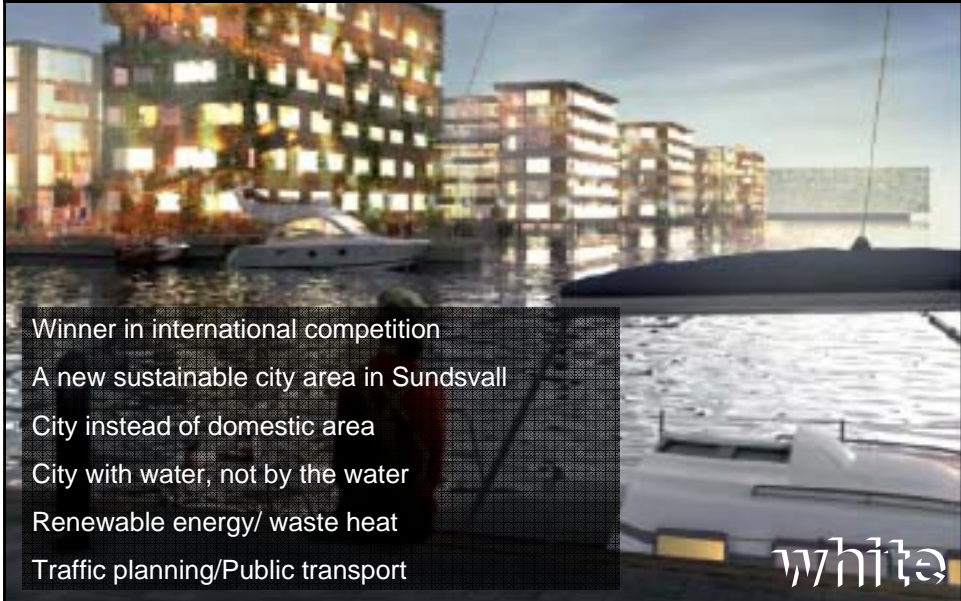
White is involved in 11 completed and ongoing projects

White

Housing in Hammarby Sjöstad



Sustainable city planning



Health care



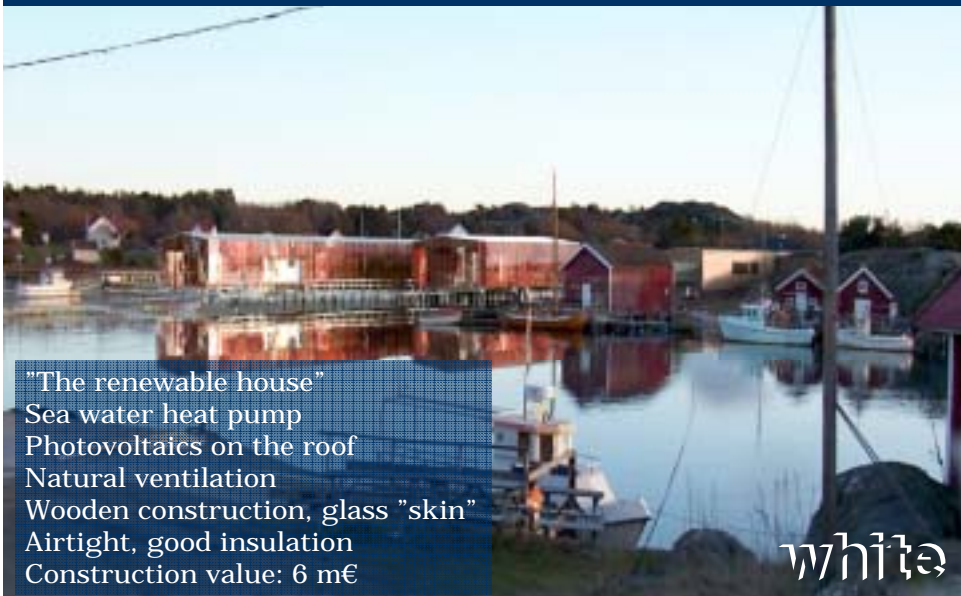
Health care



Culture and Leisure



Infocenter, national park of Koster Sea



"The renewable house"
Sea water heat pump
Photovoltaics on the roof
Natural ventilation
Wooden construction, glass "skin"
Airtight, good insulation
Construction value: 6 m€

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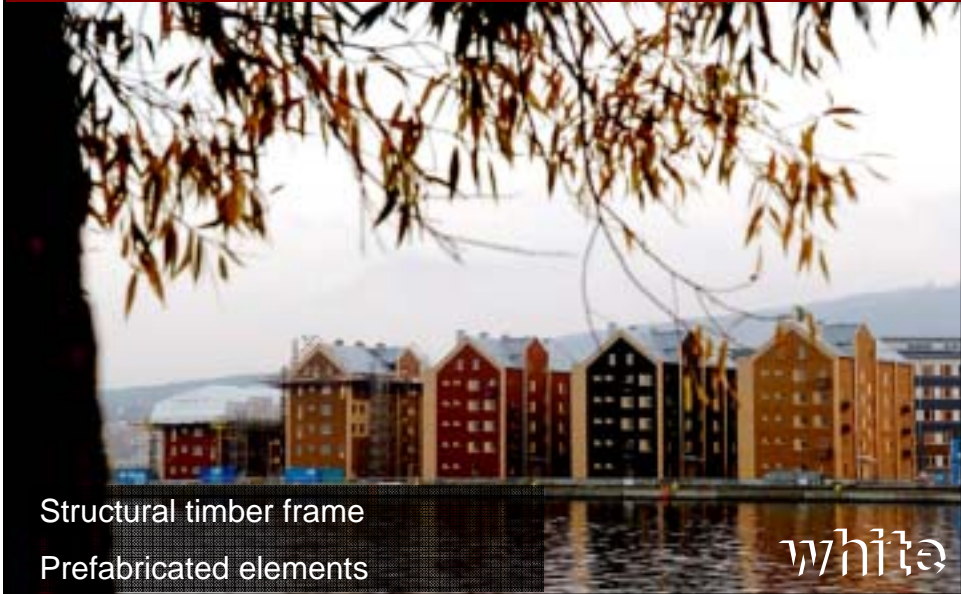
Culture and Leisure



Commercial and Retail



Housing, Sundsvall



Structural timber frame
Prefabricated elements

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Mixed tenure housing, Gothenburg



White's own development project
Rental apartments and owner
occupied housing


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Mixed use development, Malmö



Grahame Park, London






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Can we afford NOT to create sustainable
buildings?

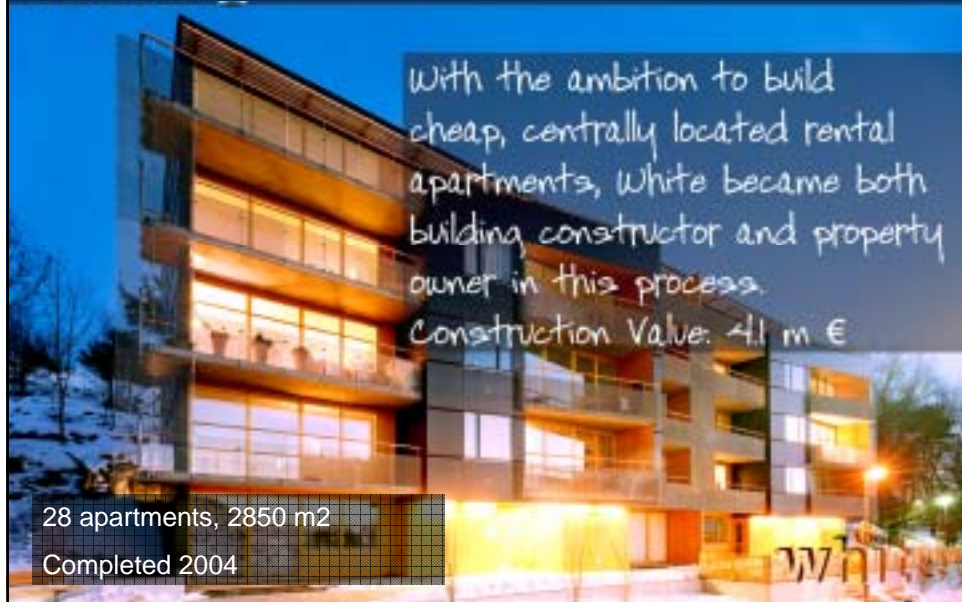
Opportunities/Benefits

- Trends; future generations have higher demands
- More attractive to invest in a sustainable building
- Better loans?
- Competitive tool in the future
- Awareness of environmental impact from our buildings will increase
- Good environment in buildings improve productivity, health and well-being
- CSR; marketing benefits
- BREEAM, CfSH etc will make it easier to marketing your building

How to decrease costs

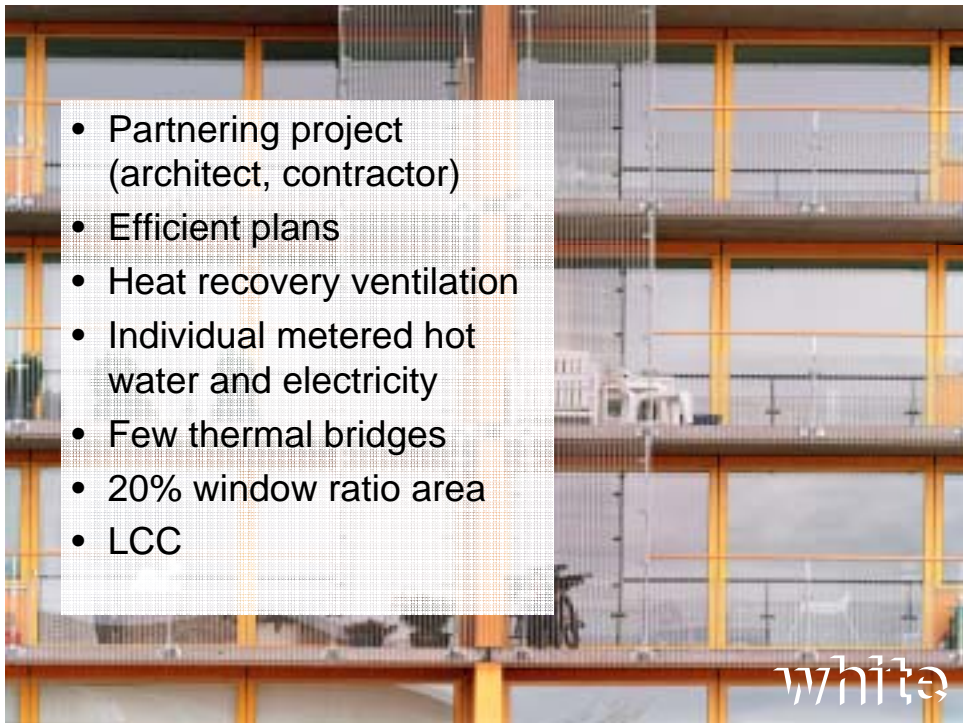
- Good process, involve stakeholders early
- Clear targets from the beginning. Everyone shall know what to do.
- Good space planning can decrease the building area
- Design for an efficient production process
- Quality control on site
- Life cycle cost analysis!
- Prioritize. What is the most important question in this project?

Vävskedsgatan, Gothenburg



- Affordable rent
- Environmental program
- Sustainable building materials
- Energy efficient:
<85 kWh/m², yr (measured value)
(average Sweden 175 kWh/m², yr)
- High indoor climate demands (P-label)





- Partnering project (architect, contractor)
- Efficient plans
- Heat recovery ventilation
- Individual metered hot water and electricity
- Few thermal bridges
- 20% window ratio area
- LCC

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Hamnhuset, Gothenburg

Passive house standard

Total energy demand: 60 kWh/m², yr
(heating+hot water: 25 kWh/m², yr
electricity: 35 kWh/m²)

Sustainable building materials

High indoor climate demand

Life cycle cost analysis

Construction value:

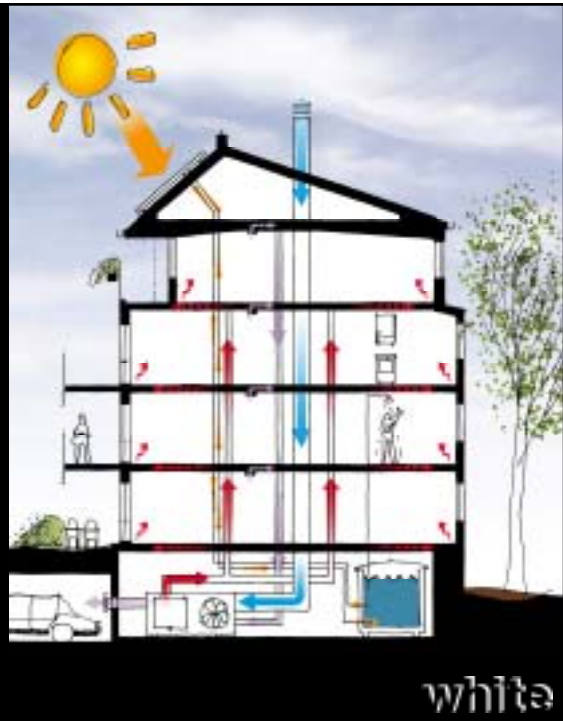
Mechanical ventilation
with heat recovery

Highly insulated (300
mm), U-value windows
1,3 W/m²K

Energy demand for
heating:
~12 kWh/m² yr

District heating

Solar panels for hot
water:
15 kWh/m² yr



Life cycle costs

LCC-calculations to ensure reduced energy use without
increasing the operational costs

Additional investments for energy saving:
2,5% of total investment, ca 5 mSEK

It is profitable to invest more initially, despite a higher
monthly interest.

Reduced monthly operational costs

Not only long term-also first year!

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White office, Stockholm



White's own project: the client,
architect, project management,
environmental management etc

Construction value: 11 m €



Low energy use

Heavy building thermal mass

Sea water cooling/heating system

Indoor climate

Sustainable building materials

Post-assessed BREEAM Very

Good

School, Malmö



Post-assessed BREEAM Excellent
Very low energy use
Mechanical ventilation, heat recovery
Healthy building materials
Airtight, well constructed

Concept living: Optibo



Optibo



Optibo



Optibo



Summary

- A good process where the sustainability questions are integrated from the beginning, so they will be a condition among all others.
- Clever design doesn't have to be more expensive and can even decrease the cost of production.
- Efficient in space planning, office space planning
- Life cycle costs
- Sustainable design can give a lot of benefits
- Sustainable design will be a competitive tool in the future
- Awareness of environmental impact from our buildings will increase
- Good examples are necessary to show others that it is possible.
- Incentives and fundings from the communities or the government is helpful.
- Development of sustainable energy resources is important
- Risk management, unhealthy buildings "You haven't used the best practise".
- Good examples are needed

Thank you!

Anna Graaf, anna.graaf@white.se

Tel. +46-31826806, +46-705101662

www.white.se